

U.S. Patent Application Serial No. 10/647,230
Amendment dated July 8, 2004
Reply to OA of May 6, 2004

REMARKS

Claims 1-6 are pending in this application. No amendment has been made in this Response.

It is believed that this Amendment is fully responsive to the Office Action dated May 6, 2004.

Claims are rejected under 35 U.S.C. §102(e) as being anticipated by Andrews et al. (U.S. Patent No. 6,200,208). (Office action paragraph no. 2)

The rejection of claims 1-6 over Andrews et al. is respectfully traversed, and reconsideration of the rejection is respectfully requested.

The Examiner states that Andrews et al. “discloses a metal-bonded grinding tool comprising a base, abrasive grains bonded to the base by means of a metal bond matrix containing a Cu alloy as main component, wherein the metal bond matrix contains an alloy phase, a mixed phase and intermetallic compound of Zr and Ti ...”, citing columns 3 to 12. However, the Examiner has not indicated the specific portions of the reference disclosing this.

In traversing the rejection, Applicants note that the recited **base** in the present application is shown as reference numeral 4 in the drawings and described starting on page 6, line 14. The term “base” is also discussed in the Related Art section on page 1. It is clear from the disclosure in the present application that the **base** is a separate claim element, and is made of a different material, than the **metal bond matrix**.

Andrews et al. does not use the term “base.” Andrews discusses “conventional straight

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wheels” and “monolithic” wheels. Andrews indicates that:

“Monolithic wheels are made up basically of abrasive grains and a bond which holds the abrasive grains in the desired shape.” (column 1, lines 65-67)

In addition, Andrews et al. states:

“The term "monolithic" means that the abrasive wheel material is a uniform composition completely from the radius of the arbor hole to the radius of the wheel. That is, basically the whole body of the monolithic wheel is an abrasive disk comprising abrasive grains embedded in a sintered bond. The abrasive disk **does not have an integral, non-abrasive portion for structural support of the abrasive portion, such as a metal core** on which the abrasive portion of a grinding wheel is affixed, for example.” (column 3, lines 23-31) (emphasis added)

That is, this “core” would correspond to a “base,” but “monolithic” wheels **do not have a base** and are made entirely of the bonded abrasive grains.

Andrews’ invention is a monolithic abrasive tool made up entirely of a mixture of particulate ingredients molded and sintered into the desired shape (see, for example, column 2, lines 41-60). Therefore, Andrews’ abrasive wheel **does not have a base**. The abrasive grains in Andrews are **not bonded to a base** as required by claim 1. The abrasive grains are in a monolithic, molded and sintered article.

Since Andrews does not disclose a base, claim 1 and dependent claims 2-6 are **not anticipated** by the reference.

Moreover, with regard to the specific limitation of claim 4, zirconium and titanium are disclosed in Andrews only as one two of a number of possible active metal components (column 4, lines 58-60). The reference does not appear to disclose any limitation on the ratio of Zr to Ti.

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In addition, with regard to the limitation recited in claim 5, Andrews et al. discloses possible compositions for the copper-tin component in column 4, lines 39-48. Andrews discusses Sn percentages of 10-40 wt%, 10-30 wt% and 25-30 wt%. However, none of these anticipates the 5 to 20 wt% limitation in claim 5.

Applicants therefore assert that claims 1-6 are not anticipated by Andrews et al.

Claim 4 is rejected under 35 U.S.C. §103(a) as being unpatentable over Andrews et al. (U.S. Patent No. 6,200,208). (Office action paragraph no. 4)

The rejection of claim 4 is respectfully traversed, and reconsideration of the rejection is respectfully requested.

Applicants submit that no *prima facie* case of obviousness can be made for claim 4 over Andrews et al. because Andrews et al. does not disclose a **base**, as discussed above. Andrews et al. clearly teaches away from the use of a base and does not suggest a base.

Moreover, Applicants have noted above that Ti and Zr are only two of the possible metals listed as an active metal component in Andrews. There is no explicit disclosure in the reference of use of both Ti and Zr; this is only one of the many permutations if two metals are used. There is no disclosure in Andrews et al. of the specific ratio range of Ti to Zr recited in claim 4. Moreover, there is no indication in the reference that the ratio of the active metal components would be an important parameter. Andrews et al. teaches only that "titanium is preferred" (see column 4, line 62, to column 5, line 10). Applicants therefore submit that there is no suggestion or motivation in Andrews

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et al. for the ratio range recited in claim 4.

Applicants therefore submit that claim 4 is novel and non-obvious over Andrews et al.

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact Applicants undersigned agent at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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